

论文 氯沙坦对血管紧张素II致培养的牛脑微血管内皮细胞损伤的保护作用

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摘要:

目的观察氯沙坦对血管紧张素II(Ang II)致牛脑微血管内皮细胞(BCMECs)损伤的保护作用。方法用分光光度计测定培养的BCMECs乳酸脱氢酶(LDH)的漏出量,流式细胞仪测定BCMECs细胞间粘附分子-1(ICAM-1)的表达量,硝酸还原酶法和放射免疫分析法分别测定BCMECs上清液中一氧化氮(NO)和内皮素-1(ET₁)的含量。结果Ang II呈剂量依赖性增加BCMECs LDH漏出、NO和ET₁释放及ICAM-1表达,氯沙坦对此均有明显抑制作用。结论氯沙坦抑制Ang II致体外培养BCMECs的损伤。

关键词: 脑微血管内皮细胞 血管紧张素II 氯沙坦 AT₁受体

Protective effect of losartan on bovine cerebral microvessel endothelial cell injury induced by angiotensin II in culture

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Abstract:

AimTo investigate the protective effects of losartan on bovine cerebral microvessel endothelial cell (BCMEC) injury induced by angiotensin II (Ang II) in culture. MethodsIn this study, cultured bovine cerebral microvessel endothelial cells were used and the lactate dehydrogenase (LDH) leakage from bovine cerebral microvessel endothelial cells were observed. Flow cytometry was used to evaluate intercellular adhesion molecule-1 (ICAM-1) expression in bovine cerebral microvessel endothelial cells. Supernatant nitric oxide (NO) and endothelin-1 (ET₁) contents in bovine cerebral microvessel endothelial cells were measured, by NO assay kit and radioimmunoassay, respectively. ResultsAngiotensin II, in a dose-dependent manner, increased lactate dehydrogenase leakage, NO and ET₁ releases, intercellular adhesion molecule-1 expression of bovine cerebral microvessel endothelial cells. These effects induced by 1×10⁻⁶ mol·L⁻¹ angiotensin II were all significantly inhibited by 1×10⁻⁵ mol·L⁻¹ losartan. ConclusionAngiotensin II may be involved in the initiation and progression of cerebrovascular disease by injuring cerebral endothelium directly and causing endothelial dysfunction. Losartan was shown to protect against angiotensin II-induced bovine cerebral microvessel endothelial cells injury by blocking AT₁ receptor, suggesting that losartan may play a role in the prevention and treatment of cerebrovascular diseases.

Keywords: angiotensin II losartan AT₁ receptor cerebrovascular endothelial cells

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